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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,452	11/14/2001	Virginia M. Vasey-Glandon	D-3988CIP	6920
826	7590	05/02/2005	EXAMINER	
ALSTON & BIRD LLP BANK OF AMERICA PLAZA 101 SOUTH TRYON STREET, SUITE 4000 CHARLOTTE, NC 28280-4000			FERRIS III, FRED O	
			ART UNIT	PAPER NUMBER
			2128	

DATE MAILED: 05/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/987,452	<b>Applicant(s)</b> VASEY-GLANDON ET AL.	
	<b>Examiner</b> Fred Ferris	<b>Art Unit</b> 2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 May 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>4/30/04, 1/5/04</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. *Claims 1-12 have been presented for examination based on applicant's disclosure filed on 14 November 2001 and Preliminary amendment filed 30 May 2002. Claims 1-12 have been rejected by the examiner.*

### ***Drawings***

2. *Applicant's drawings submitted on 30 May 2002 have been approved by the examiner.*

### ***Double Patenting***

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

3. ***Claims 1-12 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-12 of prior U.S. Patent No. 6,341,261. This is a double patenting rejection.***

*Claims 1-12 of the present invention are identical in scope and verse to the corresponding claims of U.S. Patent No. 6,341,261 thereby claiming the same invention.*

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

***4. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,220,743 issued to Campestre et al in view of "CAD Based Optimization of Composite Structures", P. Morelle et al, Proceedings of Sixth Int. Con. on OPT, March 1999.***

*Per independent claim 1: Campestre teaches a knowledge based design optimization process (CL7-35-CL31-L29-33, Fig. 9) for designing and globally optimizing 3-D parts (Figs. 4, 10, Tables 43-58, i.e. durable goods) and displaying views and corresponding data (Figs. 35-39) describing the parts and illustrating features specified by a user (Figs. 2, 4, 40-75). (Also see Abstract, Summary of Invention, Figs. 1-10, 35-39)*

*Campestre does not explicitly teach knowledge based design optimization of laminate structures inclusive of ply definition, regions defining laminate substructures, or stacking sequences.*

*Morelle teaches design and optimization of laminate structures (Section 4.0, page 315, Abstract) that includes ply definition, definitions of laminate structure regions, and stacking sequences. Morelle further defines the thickness (ramp) details of interconnected regions (Sections 3.0-3.3, page 314) and multidimensional laminate feature definition using the COMPORT, MSC/Partran laminate modeler, and FiberSim systems. Morelle further addresses the connectivity between laminate regions of structures (Section 2.2, page 313), thickness (ramp) details of interconnected of laminate regions (Section 3.3, page 314), optimizing the stacking sequences (Section 3.0, page 314, Abstract), and parametric design (Sections 2.1, 4.0, pages 312, 315)*

*It would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the teachings of Campestre relating to knowledge based design optimization process of products, with the teachings of Morelle relating to optimization of laminate structures including ply definition, definitions of laminate structure regions, and stacking sequences, to realize the claimed invention. An obvious motivation exists since, in this case, the Campestre reference teaches to the Morelle reference, and the Morelle reference teaches to the Campestre reference. Specifically, both Campestre and Morelle teach optimizing the design of manufactured products are used in the same technological arena as noted above. Campestre teaches to Morelle because Campestre teaches optimizing the design of products using rule*

*based (Knowledge) optimization techniques (See: Campestre, Summary of Invention). Morelle teaches to Campestre because Morelle specifically teaches optimization of laminates structures. (See: Morelle: Abstract) Further, the level of skill required by an artisan to realize the claimed limitations of the present invention is clearly established by both references. (See: Campestre/Morelle, Background/Abstract) Accordingly, a skilled artisan having access to the teachings of Campestre and Morelle, would have knowingly modified the teachings of Campestre with the teachings of Morelle (or visa versa) to realize the claimed elements of the present invention while reducing the cost and development time.*

*Per dependent claim 2: Campestre teaches the use of knowledge based rules (i.e. predetermined rules) that are used to modify the design optimization process of manufactured parts (Figs. 34-39) and hence would have knowingly been incorporated by a skilled artisan using the reasoning cited above.*

*Per independent claims 3, 4 and 8: As previously cite above, Campestre teaches a knowledge based design optimization process (CL7-35-CL31-L29-33, Fig. 9) for designing and globally optimizing 3-D parts (Figs. 4, 10, Tables 43-58, i.e. durable goods) and displaying views and corresponding data (Figs. 35-39) describing the parts and illustrating features specified by a user (Figs. 2, 4, 40-75). (Also see Abstract, Summary of Invention, Figs. 1-10, 35-39) Campestre further discloses teaches the use of knowledge based rules (i.e. predetermined rules) that are used to modify the design optimization process of manufactured parts (Figs. 34-39).*

*Campestre does not explicitly teach knowledge based design optimization of*

*laminate structures inclusive of ply definition, regions defining laminate substructures, or stacking sequences.*

*Morelle teaches design and optimization of laminate structures (Section 4.0, page 315, Abstract) that includes ply definition, definitions of laminate structure regions, and stacking sequences. Morelle further defines the thickness (ramp) details of interconnected regions (Sections 3.0-3.3, page 314) and multidimensional laminate feature definition using the COMPORT, MSC/Partran laminate modeler, and FiberSim systems. Morelle further addresses the connectivity between laminate regions of structures (Section 2.2, page 313), thickness (ramp) details of interconnected of laminate regions (Section 3.3, page 314), optimizing the stacking sequences (Section 3.0, page 314, Abstract), and parametric design (Sections 2.1, 4.0, pages 312, 315)*

*It would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the teachings of Campestre relating to knowledge based design optimization process of products and connecting rules, with the teachings of Morelle relating to optimization of laminate structures including ply definition, definitions of laminate structure regions, and stacking sequences, to realize the claimed invention. An obvious motivation exists since, in this case, the Campestre reference teaches to the Morelle reference, and the Morelle reference teaches to the Campestre reference. Specifically, both Campestre and Morelle teach optimizing the design of manufactured products are used in the same technological arena as noted above. Campestre teaches to Morelle because Campestre teaches optimizing the design of products using rule based (Knowledge) optimization techniques (See:*

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*Campestre, Summary of Invention). Morelle teaches to Campestre because Morelle specifically teaches optimization of laminates structures. (See: Morelle: Abstract) Further, the level of skill required by an artisan to realize the claimed limitations of the present invention is clearly established by both references. (See: Campestre/Morelle, Background/Abstract) Accordingly, a skilled artisan having access to the teachings of Campestre and Morelle, would have knowingly modified the teachings of Campestre with the teachings of Morelle (or visa versa) to realize the claimed elements of the present invention while reducing the cost and development time. The combination of Campestre and Morelle therefore also renders obvious the parametric composite knowledge system (PACKS) as recited in the limitations of claim 4.*

*Per claims 5-7, 9-12: As noted above, Campestre teaches connectivity between rules (and hence subroutines) using knowledge based techniques (CL7-35-CL31-L29-33, Fig. 9, Tables 43-58), Morelle teaches user selection of ply orders (layers) which are defined with respect to a surface (Sections 2.2-3.3, 5.0, Abstract) and hence would have knowingly been incorporated by a skilled artisan using the reasoning cited above.*

### **Conclusion**

5. *The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Careful consideration should be given prior to applicant's response to this Office Action.*

*U.S. Patent 5,954,898 issued to McKague et al teaches optimizing and fabrication of composite laminate designs.*



*U.S. Patent 5249,120 issued to Foley teaches optimizing and fabrication of composite laminate designs.*

*Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Ferris whose telephone number is 571-272-3778 and whose normal working hours are 8:30am to 5:00pm Monday to Friday. Any inquiry of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is 571-272-3700. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jean Homere can be reached at 571-272-3780. The Official Fax Number is: (703) 872-9306*

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April 15, 2005

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